

**METHOD OF OPERATING AN ENERGY SYSTEM USING LOAD PROFILE PARAMETERS****Abstract**

- 5           An energy system is formed of a plurality of battery cells, and has an application associated therewith that draws power from the energy system, thereby creating a load profile that is presented to the energy system. As the application is being used, voltage and current measurements are taken at a predetermined rate, and stored in a history table to create a series of time-based measurements. The measurements stored in the history table are
- 10 then processed to produce an energy spectra and a power spectra corresponding to the load profile presented to the energy system by the application. A charging strategy in accordance with this energy spectra and power spectra is then defined and used to charge the energy system appropriately.